

CLAIMS

1. A speaker for focusing sound in audible frequency to a focal point, comprising,

5 a sound lens filled with a gas heavier than air;
sound source generators coupled with the sound lens in concentric axis; and

a soundproof chamber for surrounding the sound lens and the sound source generators.

10 2. The speaker of claim 1, wherein the sound lens includes

a sound absorbing material for preventing sound from spreading and reflecting to unnecessary direction for sound
15 focusing;

a convex border membrane for refracting sound wave;

a vertex vibration absorbing structure for attenuating an overtone vibration of the border membrane; and

20 a center fixing connector for supporting the vertex vibration absorbing structure.

3. The speaker of claim 1, wherein the sound source generator includes a high pitch sound source vibrator and a low pitch sound source vibrator, which are separated from
25 each other.

4. The speaker of claim 3, wherein the high pitch sound source vibrator is positioned at central area and the low pitch sound source vibrator is positioned at concentric
30 circumferential area of the high pitch sound source vibrator.

5. The speaker of claim 2, wherein the sound absorbing material is attached in layers at an inner wall of the sound lens.

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6. The speaker of claim 1, wherein the inner gas filled in the sound lens is CO₂ or Kr.

5 7. The speaker of claim 1, wherein the sound lens further includes a gas pressure control unit for controlling the pressure of a gas that is filled in the sound lens.